

①

	q	I	t
a)	30C	6.0A	
b)	4.0C		3.0min
c)		5.0mA	2.5h

$$a) t = \frac{q}{I} = \frac{30C}{6.0A} = \underline{5.0s}$$

$$b) I = \frac{4.0C}{180s} = \underline{22mA}$$

$$c) q = It = 5 \times 10^{-3} A \times 9000 = \underline{45C}$$

②

	V	q	W
a	10V	2.0C	
b	50mV		20kJ
c		150mC	30MJ

$$a) W = Vq = 10V \times 2.0C = \underline{20J}$$

$$b) q = \frac{W}{V} = \frac{20000J}{5.0 \times 10^{-2}} = \underline{400000C}$$

$$c) V = \frac{30000000J}{0.150C} = \underline{200MV}$$

③

$$q = It = 0.300A \times 25s = \underline{7.5C}$$

④

$$\frac{1C}{6.25 \times 10^{18}} = \frac{x}{5.4 \times 10^{18}}$$

$$q = 0.864C$$

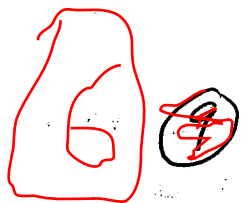
$$W = Vq = 1.5V \times 0.864C = \underline{1.3J}$$



$$I = \frac{q}{t}$$

$$V = \frac{W}{q} \rightarrow q = \frac{W}{V}$$

$$I = \frac{W}{Vt} = \frac{4.72 \text{ J}}{6.0 \text{ V} \times 30 \text{ s}} = \underline{26 \text{ mA}}$$



$$\frac{1 \text{ C}}{6.25 \times 10^{18}} = \frac{x}{3.0 \times 10^{15}}$$

$$I = \frac{q}{t} = \frac{0.00048 \text{ C}}{0.10 \text{ s}}$$

$$q = 0.00048 \text{ C}$$

$$= \underline{4.8 \text{ mA}}$$



$$q = 1.60 \times 10^{-19} \text{ C}$$

$$\begin{aligned} W &= Vq \\ &= 100 \text{ V} (1.60 \times 10^{-19} \text{ C}) \\ &= \underline{1.60 \times 10^{-17} \text{ J}} \end{aligned}$$